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WHAT IS CLAIMED IS:

1	 An isolated nucleic acid encoding a G-protein coupled receptor
2	polypeptide, the nucleic acid encoding a polypeptide comprising greater than 70% amino
3	acid identity to an amino acid sequence of SEQ ID NO:6, SEQ ID NO:4, SEQ ID NO:8,
4	SEO ID NO:10 SEO ID NO:12 or SEO ID NO:16

- 1 2. An isolated nucleic acid of claim 1, wherein the nucleic acid
 2 encodes a polypeptide comprising greater than 80% amino acid identity to an amino acid
 3 sequence of SEQ ID NO:6, SEQ ID NO:4, SEQ ID NO:8, SEQ ID NO:10, SEQ ID
 4 NO:12, or SEO ID NO:16.
 - An isolated nucleic acid of claim 1, wherein the nucleic acid encodes a polypeptide comprising greater than 90% amino acid identity to an amino acid sequence of SEQ ID NO:6, SEQ ID NO:4, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, or SEQ ID NO:16.
 - 4. The isolated nucleic acid of claim 1, wherein the nucleic acid encodes a polypeptide that specifically binds to polyclonal antibodies generated against an amino acid sequence of SEQ ID NO:6, SEQ ID NO:4, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, or SEQ ID NO:16.
- 1 5. The isolated nucleic acid of claim 1, wherein the nucleic acid 2 encodes a polypeptide that has G-protein coupled receptor activity.
- 1 6. The isolated nucleic acid of claim 1, wherein the nucleic acid
 2 encodes a polypeptide comprising an amino acid sequence of SEQ ID NO:6, SEQ ID
 3 NO:4, SEO ID NO:8, SEO ID NO:10, SEQ ID NO:12, or SEO ID NO:16.
- The isolated nucleic acid of claim 1, wherein the nucleic acid comprises the nucleotide sequence of SEQ ID NO:5, SEQ ID NO:3, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, or SEQ ID NO:15.
- 1 8. The isolated nucleic acid of claim 1, wherein the nucleic acid is
 2 amplified by primers that specifically hybridize under stringent hybridization conditions
 3 to a nucleic acid having a nucleotide sequence of SEQ ID NO:5, SEQ ID NO:3, SEQ ID
 4 NO:7, SEQ ID NO:9, SEQ ID NO:11, or SEQ ID NO:15.

- 1 9. An isolated nucleic acid encoding a G-protein coupled receptor
 2 polypeptide, wherein the nucleic acid specifically hybridizes under stringent hybridization
 3 conditions to a nucleic acid having a nucleotide sequence of SEQ ID NO:5, SEQ ID
 4 NO:3, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, or SEQ ID NO:15.
 - 10. An isolated nucleic acid encoding a G-protein coupled receptor polypeptide, the polypeptide encoded by the nucleic acid comprising greater than about 70% amino acid identity to a polypeptide having an amino acid sequence of SEQ ID NO:6, SEQ ID NO:4, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, or SEQ ID NO:16, wherein the nucleic acid selectively hybridizes under moderately stringent hybridization conditions to a nucleotide sequence of SEQ ID NO:5, SEQ ID NO:3, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, or SEO ID NO:15.
 - 11. An isolated nucleic acid encoding a G-protein coupled receptor polypeptide, wherein the nucleic acid encodes a polypeptide comprising at least 25 contiguous amino acids of the amino acid sequence of SEQ ID NO:6, SEQ ID NO:4, SEQ ID NO:10, SEQ ID NO:12, or SEQ ID NO:16.
 - 12. The isolated nucleic acid of claim 11, wherein the nucliec acid encodes a polypeptide that comprises at least 50 contiguous amino acids of the amino acid sequence of SEQ ID NO:6, SEQ ID NO:4, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, or SEQ ID NO:16.
- 1 13. An isolated nucleic acid encoding a G-protein coupled receptor
 2 polypeptide, wherein the nucleic acid encodes a polypeptide comprising greater than 90%
 3 amino acid identity to an amino acid sequence of SEQ ID NO:2 or SEQ ID NO:14.
- 1 14. The isolated nucleic acid of claim 13, wherein the nucleic acid encodes a polypeptide that specifically binds to polyclonal antibodies generated against an amino acid sequence of SEQ ID NO:2 or SEQ ID NO:14.
- 1 15. The isolated nucleic acid of claim 13, wherein the nucleic acid 2 encodes a polypeptide that has G-protein coupled receptor activity.

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- 1 16. The isolated nucleic acid of claim 13, wherein the nucleic acid
 2 encodes a polypeptide comprising an amino acid sequence of SEQ ID NO:2 or SEQ ID
 3 NO:14
- 1 17. The isolated nucleic acid of claim 13, wherein the nucleic acid comprises the nucleotide sequence of SEQ ID NO:1 or SEQ ID NO:13.
 - 18. An isolated nucleic acid encoding a G-protein coupled receptor polypeptide, the polypeptide encoded by the nucleic acid comprising greater than about 90% amino acid identity to a polypeptide having an amino acid sequence of SEQ ID NO:14, wherein the nucleic acid selectively hybridizes under moderately stringent hybridization conditions to a nucleotide sequence of SEQ ID NO:1 or SEO ID NO:13.
 - 19. An isolated G-protein coupled receptor polypeptide, the polypeptide comprising greater than about 70% amino acid sequence identity to an amino acid sequence of SEQ ID NO:6, SEQ ID NO:4, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, or SEQ ID NO:16.
 - 20. The isolated polypeptide of claim 19, wherein the polypeptide comprises greater than 80% amino acid sequence identity to an amino acid sequence of SEQ ID NO:6, SEQ ID NO:4, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, or SEQ ID NO:16.
 - 21. The isolated polypeptide of claim 19, wherein the polypeptide comprises greater than 90% amino acid sequence identity to an amino acid sequence of SEQ ID NO:6, SEQ ID NO:4, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, or SEQ ID NO:16.
- 1 22. The isolated polypeptide of claim 19, wherein the polypeptide
 2 specifically binds to polyclonal antibodies generated against SEQ ID NO:6, SEQ ID
 3 NO:4, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, or SEQ ID NO:16.
- 1 23. The isolated polypeptide of claim 19, wherein the polypeptide has 2 G-protein coupled receptor activity.

1	2	24.	The isolated polypeptide of claim 19, wherein the polypeptide has		
2	the amino acid sequence of SEQ ID NO:6, SEQ ID NO:4, SEQ ID NO:8, SEQ ID NO:10,				
3	SEQ ID NO:12, or SEQ ID NO:16.				
1	:	25.	An isolated G-protein coupled receptor polypeptide, the		
2	polypeptide cor	nprisir	ng greater than about 90% amino acid sequence identity to an amino		
3	acid sequence of SEQ ID NO:2 or SEQ ID NO:14.				
1	,	26.	The isolated polypeptide of claim 25, wherein the polypeptide		
2			olyclonal antibodies generated against SEQ ID NO:2 or SEQ ID		
3	NO:14.	us to p	oryclonar antibodics-generated against 52-Q 12 110.2 of 52-Q 12		
3	NO:14.				
1	1	27.	The isolated polypeptide of claim 25, wherein the polypeptide has		
2	G-protein coup	led rec	eptor activity.		
		20	The state of the second of the		
1		28.	The isolated polypeptide of claim 25, wherein the polypeptide has		
2	an amino acid s	equen	ce of SEQ ID NO:2 or SEQ ID NO:14.		
1	:	29.	An antibody that selectively binds to the polypeptide of claim 19,		
2	or 25.				
1		30.	An expression vector comprising the nucleic acid of claim 1, 11, or		
2	13.				
1		31.	A host cell transfected with the vector of claim 30.		
1		32.	A method for identifying a compound that modulates signal		
2	transduction, the method comprising:				
3			tacting the compound with a polypeptide comprising greater than		
4	70% amino acid sequence identity to the amino acid sequence of SEQ ID NO:6, SEQ ID				
5	NO:4, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, or SEQ ID NO:16; and				
6		(11) de	termining the functional effect of the compound upon the		
7	polypeptide.				
1		33	The method of claim 32, wherein the polypeptide has G-protein		

coupled receptor activity.

1 2	solid phase.	34.	The method of claim 32, wherein the polypeptide is linked to a
1 2	linked to a sol	35. lid phas	The method of claim 34, wherein the polypeptide is covalently e.
1 2	determined by	36. measu	The method of claim 32, wherein the functional effect is ring changes in intracellular cAMP, IP3, or Ca ²⁺ .
1 2	effect.	37.	The method of claim 32, wherein the functional effect is a chemical
1 2	effect.	38.	The method of claim 32, wherein the functional effect is a physical
1 2	determined by	39. y measu	The method of claim 32, wherein the functional effect is tring binding of the compound to the polypeptide.
1		40.	The method of claim 32, wherein the polypeptide is recombinant.
1 2 3			The method of claim 32, wherein the polypeptide comprises the of SEQ ID NO:6, SEQ ID NO:4, SEQ ID NO:8, SEQ ID NO:10, EQ ID NO:16.
1 2	cell or cell m	42. embran	The method of claim 32, wherein the polypeptide is expressed in a e.
1		43.	The method of claim 42, wherein the cell is a eukaryotic cell.
1		44.	The method of claim 43, wherein the cell is an adipocyte.
1		45.	The method of claim 43, wherein the cell is a spleen cell.
1		46.	The method of claim 43, wherein the cell is a colon cell.
1		47.	The method of claim 43, wherein the cell is a neuron.
1 2	transduction,	48. the me	A method for identifying a compound that modulates signal thod comprising the steps of:

3		(i) con	tacting the compound with a polypeptide comprising greater than	
4	90% amino acid sequence identity to the amino acid sequence of SEQ ID NO:2 or SEQ			
5	ID NO:14; and			
6		(ii) det	ermining the functional effect of the compound upon the	
7	polypeptide.			
			m	
1		49.	The method of claim 48, wherein the polypeptide has G-protein .	
2	coupled receptor activity.			
1		50.	The method of claim 48, wherein the polypeptide is linked to a	
2	solid phase.			
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1		51.	The method of claim 48, wherein the functional effect is	
2	determined by	measu	ring changes in intracellular cAMP, IP3, or Ca ²⁺ .	
1		52.	The method of claim 48, wherein the functional effect is a chemical	
2	effect.	32.	The medica of claim 10, wherein the value value is a second of claim.	
-	CITOCI.			
1		53.	The method of claim 48, wherein the functional effect is a physical	
2	effect.			
1		54.	The method of claim 48, wherein the functional effect is	
1	4 - c d ba		ring binding of the compound to the polypeptide.	
2	determined by	y measu	ring binding of the compound to the polypeptide.	
1		55.	The method of claim 48, wherein the polypeptide is recombinant.	
1		56.	The method of claim 48, wherein the polypeptide comprises the	
2	amino acid se	quence	of SEQ ID NO:2 or SEQ ID NO:14.	
1		57.	The method of claim 48, wherein the polypeptide is expressed in a	
2	cell or cell me	embrane	2.	
1		58.	The method of claim 57, wherein the cell is a eukaryotic cell.	
1		59.	The method of claim 58, wherein the cell is a kidney cell.	
1		57.	The medical of claim 50, wastern and the same and the sam	
1		60.	A method of treating kidney disease, the method comprising the	
2	step of administering to a patient a therapeutically effective amount of a compound			
3	identified using the method of claim 48.			

1	61. A method of treating cerebral cavernous malformations, the		
2	method comprising the step of administering to a patient a therapeutically effective		
3	amount of a compound identified using the method of claim 48.		
1	62. A method of treating hyperlipidemia, the method comprising the		
2	step of administering to a patient a therapeutically effective amount of a compound		
3	identified using the method of claim 32.		
1	63. A method of treating obesity, the method comprising the step of		
2	administering to a patient a therapeutically effective amount of a compound identified		
3	using the method of claim 32.		
1	64. A method of treating dyslexia, the method comprising the step of		
2	administering to a patient a therapeutically effective amount of a compound identified		
3	using the method of claim 32.		
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l	65. A method of treating cardiac myxoma, the method comprising the		
2	step of administering to a patient a therapeutically effective amount of a compound		
3	identified using the method of claim 32.		
1	66. A method of detecting the presence of an TGR-GPCR or a EDG-		
2	GPCR nucleic acid or polypeptide in human tissue, the method comprising the steps of:		
3	(i) isolating a biological sample;		
4	(ii) contacting the biological sample with a TGR-GPCR-specific		
5	reagent or a EDG-GPCR-specific reagent that selectively associates with an TRG-GPCR		
6	nucleic acid or polypeptide or a EDG-GPCR nucleic acid or polypeptide; and,		
7	(iii) detecting the level of TGR-GPCR-specific reagent or EDG-		
8	GPCR-specific reagent that selectively associates with the sample.		
1	67. The method of claim 66, wherein the TGR-GPCR-specific reagent		
2	or EDG-GPCR-specific reagent is selected from the group consisting of: antibodies,		

oligonucleotide primers, and nucleic acid probes.